

CLAIMS

1. A photoelectric transforming connector for optical fibers comprising:
 - a first connection subject to which an optical fiber is connected and having a first light emitting portion transmitting a light signal and/or a first light receiving portion receiving a light signal through the optical fiber;
 - a second connection subject having a second light receiving portion facing the first light emitting portion and converting a light signal to an electric signal and/or a second light emitting portion facing the first light receiving portion, converting an electric signal to a light signal and transmitting it to the first light receiving portion; and
 - a shell to which the first connection subject and the second connection subject are attached; wherein
 - the shell has a bottom plate to which the first connection subject and the second connection subject are attached so that the first light emitting portion faces the second light receiving portion and/or the first light receiving portion faces the second light emitting portion, and a plurality of elastic pieces provided to stand upward on four sides of the bottom plate and contacting with the first connection subject and the second contacting subject.
2. The photoelectric transforming connector in accordance with claim 1, characterized by that

two elastic pieces are individually formed corresponding to the first connection subject and the second connection subject on each of two sides among four side of the bottom plate, which are parallel to an opposing direction of the first connection subject and the second connection subject.

3. The photoelectric transforming connector in accordance with claim 2, characterized by that

an engaging portion, which is inwardly bent, is formed in a vicinity of a front end of at least an elastic piece corresponding to the first connection subject among two elastic pieces respectively provided on each of two sides of the bottom plate parallel to the opposing direction of the first connection subject and the second connection subject, and a slanted face pressed toward the bottom plate of the shell with the engaging portion is formed on each side face of the first connection subject.

4. The photoelectric transforming connector in accordance with claim 1, characterized by that

a convex engaging portion and a concave engaging portion are formed on opposing faces of the first connection subject and the second connection subject;

a front end and a base end of the convex engaging portion are not contact to a base end and a front end of the concave engaging portion in a state that the first connection subject and the second connection subject are connected; and

front ends of at least one of the convex engaging portion and

the concave engaging portion are formed so that edges of both sides of them in a direction perpendicular to the opposing direction of the first connection subject and the second connection subject contact to at least another of the convex engaging portion and the concave engaging portion.

5. The photoelectric transforming connector in accordance with claim 4, characterized by that

tapered faces are respectively formed between a front end and a base end of the convex engaging portion and between a front end and a base end of the concave engaging portion so as to contact the tapered face of the convex engaging portion to the tapered face of the concave engaging portion.

6. The photoelectric transforming connector in accordance with claim 1, characterized by that

an engaging piece protruding toward to top face side is provided on the bottom plate;

the optical fiber is connected to the first connection subject from a face opposite to the face having the first light emitting portion and the first light receiving portion, a concavity which is engaged with the engaging piece is formed at a portion corresponding to the engaging piece on a face of the first connection subject facing the bottom plate of the shell; and

the concavity has at least a wall face parallel to the face having the first light emitting portion and the first light receiving portion.

7. The photoelectric transforming connector in accordance

with claim 6, characterized by that

the engaging piece is formed by cutting the bottom plate of the shell in a direction parallel to the opposing direction of the first connection subject and the second connection subject and a direction perpendicular to it and bending a portion along the cuttings toward top face side.

8. The photoelectric transforming connector in accordance with claim 1, characterized by that

the first connection subject is made of a conductive plastic material and the shell is made of a metal, and the shell is grounded.

9. The photoelectric transforming connector in accordance with claim 1, characterized by that

the first light emitting portion and the first light receiving portion are provided in parallel with each other on the face of the first connection subject facing the second connection subject; and

the second light emitting portion and the second light receiving portion are provided in parallel with each other on the face of the second connection subject facing the first connection subject respectively for facing the first light emitting portion and the first light receiving portion.

10. The photoelectric transforming connector in accordance with claim 9, characterized by that

a convex engaging portion is formed on the first connection subject, and a concave engaging portion is formed on the second connection subject;

the second light emitting portion and the second light receiving portions are respectively provided in the concave engaging portion;

a partition wall protruding toward the convex engaging portion is formed between the second light emitting portion and the light receiving portion in the concave engaging portion; and

a notch to which the partition wall is engaged is formed at a portion of the convex engaging portion corresponding to the partition wall.

11. The photoelectric transforming connector in accordance with claim 9, characterized by that

two ICs for processing signals of the second light emitting portion and the second light receiving portion are implemented on a face opposite to the face having the second light emitting portion and the second light receiving portion of the second connection subject; and

a partition wall having a conductive pattern to be grounded and preventing the interference of signals between the ICs is formed between the two ICs.